



Nevada State Library, Archives & Public Records

Transformation through Emerging Technology: The Nevada XR Libraries Project

Education around the world continues to rapidly shift to include new digital technologies. We do not want Nevadans to fall behind in this education shift. Thus, our goal at the Nevada State Library is for Nevada to be an innovative leader that provides impactful programs that benefit Nevadans and that other states learn from and follow. During the 2017 legislative session, the Nevada State Library faced multiple headwinds to get any funding to test emerging technologies to help Nevadans learn more effectively and receive training for jobs of the future. Examples of emerging technology include augmented reality and virtual reality, which are commonly called extended reality (XR). But thanks to the support of SB549, which ultimately provided \$22,000 in funding to the Nevada State Library so it could do its first-ever pilot of XR in Nevada libraries.

Based on that \$22,000 of seed funding the Nevada State Library put together an ecosystem of non-profits and emerging tech companies who used their considerable resources to assist in the project. All partners have been operating in good faith that this pilot would succeed, but with the realization that it could fail. Well, we have our answer: it's succeeding beyond our most optimistic hopes and what follows in these pages are powerful results.

PILOT LIBRARIES

Elko-Lander-Eureka
Carson City
Humboldt County
Douglas County
Lyon County
Boulder City
Churchill County
Henderson
Mineral County
Washoe County
Las Vegas Teen Tech Center
Nevada State Library
West Las Vegas
North Las Vegas
Fleischmann Planetarium (UNR)
Pershing County School District
Churchill County School District



Churchill High School student Logan watches jellyfish swimming near him in theBlu. His speech pathologist Justin Worthy coaches him by asking questions about what he is seeing.

Student-Centered Learning with VR

One of the early adopter libraries making great strides in the Nevada XR Libraries program is the Churchill County High School Library in Fallon, Nevada. Justin Worthy, a Churchill County School District speech pathologist, has been coming to the library in search of something to help his student, Logan, improve his communication skills. Through the use of virtual reality programs like theBlu – which immerses you in an underwater landscape – Justin has seen a huge leap in Logan's progress. Being in the HTC Vive headset helps the student focus on what he alone is seeing and to discuss it clearly with his speech pathologist. Logan's instructional assistant and parents have both reported seeing significant progress and increased articulation at school and at home since Logan began his weekly visits to the library. This is the power of VR!

Training the Techies

In August of 2018, 35 librarians from across the state gathered at the Nevada State Library in Carson City for a full-day training focused on implementing XR technology into their libraries.

“These libraries have demonstrated a need and have well-conceived ideas for incorporating extended reality into their library programs. Participating libraries are required to collect and submit statistics, which we will use to evaluate demand for XR technologies and ways it can be used,” says John MacLeod, executive director of New Media Learning and founder of XR Libraries.

As with any new technology the virtual reality headsets required a little getting used to, but with hands-on tutorials from content provider Lifeliqe and our non-profit partner XR Libraries, librarians left feeling more confident with the technology and more prepared to launch the equipment in their own libraries.



Librarians learn from each other at the XR Libraries in-service training day at the Nevada State Library.



UNR Basket Project

The 2019 basket project program is designed to encourage access to archives and special collections for all ages, particularly those interested in Nevada’s rich Native American heritage. A Shoshone basket will be 3D scanned and added to the Lifeliqe 3D model catalog, allowing users from all over the world to learn Nevada history.

This program will be marketed to all libraries, and will also be leveraged with the Nevada XR Libraries program’s efforts during summer reading to attract teens. All of Nevada’s XR Library pilot partners will receive a guided “tour” and a suggested library program that features the basket.

Let’s get cataloging!



Librarian Kelly Robertson uploads the very first virtual reality catalog record to OCLC while State Librarian Tod Colegrove, Library Services Manager Kathy Rush, and Digital Services Librarian Joy Holt look on.

The trendsetting doesn’t stop with the virtual reality technology – the Nevada State Library is also leading the way in a first-in-the-world virtual reality cataloging project. Kelly Robertson, the Nevada State Library’s cataloging and government publications librarian, has been working with Lifeliqe, a virtual reality publisher, to create detailed catalog records and upload them to WorldCat, a worldwide library catalog maintained by the Online Computer Library Center (OCLC). We firmly believe that the virtual medium is simply another form of learning and belongs in any library collection, just like paper, maps, videos or photos. Kelly’s work creating these catalog records makes virtual reality technology even more accessible to library users throughout the world, and highlights the educational nature of the technology.

Libraries = Education: Enhancing Education through Technology

As a part of the XR Libraries program, participating libraries are encouraged to partner with local schools and science teachers to embed emerging technology in an educational context in a program called Libraries = Education, named after Valerie Gross' 21st century vision for libraries.



Churchill County High School student Maci uses Anatomy VR to remove bones from a virtual skeleton and place them on a table. As she removes each bone she calls out its name, then checks herself with the audio narration.

Librarians have found that visual learning is very impactful – difficult concepts are more easily retained, learning is more robust, and the technology inspires curiosity. “We hope to reinforce what the teachers are teaching in school,” said Washoe County branch manager John Crockett. “If they’re teaching about Roman ruins, kids can walk around the same ruins they are learning about.”

At Churchill County High School Library, students from Mrs. Adam’s health science class utilized Lifeliqe educational content both via the web and in virtual reality to help them visualize the human skeleton in 3D and to study various bones of the body. For further study, some students used Anatomy VR to take a skeleton apart and put it back together again. After the program, 95% of students agreed that the use of the XR equipment has the potential to help them prepare for future jobs. A large percentage of students asked for additional VR content relating to CPR, first aide, and surgery.

“Bottom line, libraries equal education,” says Tammy Westergard, NSLAPR Assistant Administrator overseeing library services and library development. “The pace of change is forcing everyone to stay current and to keep learning. The library is the last, best free place where we all can go to level up our skills, no matter our age. The library is the on ramp to education – formal and informal.”

Meet the Expert: Mark Andersen

Mark Andersen co-founded Lifeliqe, a groundbreaking visual learning tool in education that Common Sense Media recently announced as one of the best education apps of 2017.

Mark is a lifelong learner who is passionate about helping students. He has put over 1,000 students and teachers into Lifeliqe experiences in virtual reality. “It is amazing to see Lifeliqe transform learning among students in public and independent schools, special needs students, and students in Alternative and Title 1 schools,” he said.



L-R: Mark Andersen—President of Lifeliqe, Carol Lloyd—Director of the Churchill County Library, and John MacLeod—Director of XR Libraries

Meet the Expert: John MacLeod

John MacLeod is the director of XR Libraries, a clearinghouse for libraries to share best practices in virtual and augmented reality technologies. He believes that augmented, virtual, mixed and 360VR video will transform the way we learn and communicate.

Over the last 30 years John has won numerous state and national awards teaching emerging technology to youth, including the California Library Associations 2018 Presidents' Award for helping libraries implement XR technology.

CSN Dialysis Program

The Nevada State Library, Archives & Public Records is making training opportunities accessible to a wider audience of adult job seekers, leveraging its connections with the College of Southern Nevada and established subject matter experts (in emerging technology, STEM skill development and career navigation) to increase interest in the Diagnostic Services Career Pathways and accelerate engagement with the Dialysis Laboratory Technician occupation.

There are four emerging technology partners lined up for this project:

- Thanks to the Nevada Career Explorer, users can explore career pathways and be matched to vital careers for Nevada's success, like the Dialysis Laboratory Technician occupation.
- With 360° immersive video from XR Libraries, prospective students can literally see if the Diagnostic Services Career Pathway is a good fit for them.
- Additionally, Lifeliqe proposes to create a brand-new virtual reality app that will be developed with one immersive scenario—how dialysis works. Curated for diagnostic healthcare, the 3D content will cognitively anchor difficult science concepts, creating meaningful understanding of the job.
- Finally, NCLab learning modules will be utilized for topics in the Dialysis Patient Care Technician core curriculum. Students visualize reactions and processes while solving problems. The modules combine real world context (dialysis), critical thinking, and some mathematics to develop quantitative reasoning.

Meet the Expert: Sue Folds

NSLA will be working hand-in-glove with CSN Workforce and Economic Development coordinator Sue Folds to roll out the proposed Dialysis Program. Her focus as coordinator is to foster strong partnerships with Southern Nevada healthcare agencies to provide training for their employees designed to meet their emerging needs. Her talents will be the linchpin to ensuring the success of this vital program!



Jennie Sue Holligan-Folds is a Coordinator for Workforce & Economic Development at the College of Southern Nevada.

OUR PARTNERS



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